same Plate—recede still farther from the genus *Mus*, and approach more nearly (as regards the dentition) to the *Arvicolidæ*. Among the species here described I may mention as examples, *M. griseo-flavus*, *M. xanthopygus*, and *M. Darwinii*; —see the molar teeth figured in Plate 34. figs. 15, 16, and 17, —and among the North American species, those constituting the genus *Neotoma*. The latter make by far the nearest approach to the *Arvicolidæ* of any which have yet come under my observation, not only in the dentition, but in the form of the skull and the large size of the coronoid process of the lower jaw; there is, nevertheless, a tolerably well marked line of distinction between the crania of the *Arvicolidæ* and *Neotoma*.

The skulls of the animals belonging to the genera *Castor*, *Ondatra*, *Arvicola*, *Spalax*, and *Geomys*, which constitute the principal groups of the family *Arvicolidæ*, when compared with those of the family *Muridæ*, present, among others, the following distinctive characters.

The temporal *fossæ* are always much contracted posteriorly, by the great anterior and lateral development of the temporal bones; the plane of the intermolar portion of the palate is below the level of the anterior portion; the coronoid process of the lower jaw is very large, the articular portion of the condyloid process is proportionately broad; the descending ramus, or posterior coronoid process, is so situated that its upper portion terminates considerably above the level of the crowns of the molars; this same process is generally * directed outwards from the plane of the horizontal ramus. The incisor teeth of the *Arvicolidæ* differ from those of the *Muridæ* in being proportionately broader and less deep from front to back—they are not laterally compressed as in *Mus*. The molar teeth are rootless,† and the folds of enamel are the same throughout the whole length of the tooth; whereas in *Mus* they enter less and less deeply into the body of the tooth as we recede from the crown, and towards the base of the visible portion (the tooth being in its socket) the indentations of the enamel are obliterated.

Now in the species of *Hesperomys*, the molar teeth are always rooted, and in the form of the skull and the lower jaw they agree with the *Muridæ*, and do not present the characters above pointed out as distinguishing the *Arvicolidæ*, and as regards the cranium and lower jaw, it is only in the genus *Neotoma* that any approach is evinced.

* I am acquainted with only one exception, and that is in the genus *Castor*. In the genus *Ondatra*, the descending ramus is but slightly twisted outwards, but in all the other *Arvicolidæ*, whose crania I have examined, it is remarkably so, and in the genera *Spalax* and *Geomys*, where this character is carried to the extreme, the descending ramus projects from the alveolus of the long inferior incisors, in the form of a rounded and almost horizontal plate.

† In aged individuals of some of the species of *Arvicolidæ*, the molar teeth possess short roots. In a skull of *Ondatra* now before me I find all the molars divided at the base into two portions, which in all probability would have formed solid roots had the animal lived longer.

Of the various groups of the order *Rodentia* found in South America, the *Sciuridæ*, so far as I am aware, are chiefly confined to the more northern parts, and do not occur in the most southern; the *Myoxidæ*, *Gerboidæ*, and *Arvicolidæ* are wanting. The species of the family *Muridæ* belong to different sections to those of the Old World. Of the *Leporidæ* I am acquainted only with one well established species—the *Lepus Braziliensis*, which however is not found "in tota America Australi," as Fischer says, there being no Hare yet found in the more southern parts, where the *Cavies* and *Chinchillas* appear to take their place. The remaining South American Rodents—certain species of *Hystricidæ*, the genera, *Echimys*, *Dasyprocta*, *Cœlogenys* and *Myopotamus*, together with the *Octodontidæ* and *Chinchillidæ*, all possess a peculiar form of skull and of the lower jaw, (more or less approaching to figs. 1, Plate 33, and figs. 23, Plate 34.) which I have described in the "Magazine of Natural History," for February 1839, and which is rarely found in the North American, or Old World Rodents. In enumerating the above groups, I omitted the *Caviidæ*, because in the form of the lower jaw they differ somewhat from the rest—they possess, in fact, a form of lower-jaw peculiar to themselves; but in the Chinchillas* the transitions between one form and the other are found.

The South American *Muridæ*, which form the chief part of Mr. Darwin's collection, were none of them procured further north than latitude 30°, with the exception of those from the Galapagos Archipelago. The species occur at the following localities.

WEST COAST OF SOUTH AMERICA.	EAST COAST OF SOUTH AMERICA.
GALAPAGOS ARCHIPELAGO.	MALDONADO.
Mus Jacobiæ.	Mus *decumanus*.
—— Galapagoensis.	—— maurus.
	—— *Musculus*.
	—— tumidus.
	—— nasutus.
COQUIMBO.	—— obscurus.
Mus longipilis.	—— arenicola.
—— Renggeri.	—— bimaculatus.
—— Darwinii.	—— flavescens.
	Reithrodon typicus.

* See Proceedings of the Zoological Society for April 9th, 1839, p. 61.